Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Little Osage River

Waterbody Segment at a Glance:

County: Vernon
Nearby Cities: Nevada
Length of impairment: 22 miles
Pollutant: Not stated
Source: Natural Background


State map showing location of watershed

Proposed for deletion on the 2002(d) 303(d) list. The length of the impairment is being adjusted from 16 to 22 miles on the 2002 listing. Also, the pollutant is corrected to "Not stated" and source corrected to "Natural Background".

TMDL Priority Ranking: Low

Description of the Problem

Beneficial uses of Little Osage River

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life and Human Health associated with Fish Consumption

Use that is impaired

- The impaired use is assumed to be Protection of Warm Water Aquatic Life and Human Health associated with Fish Consumption.

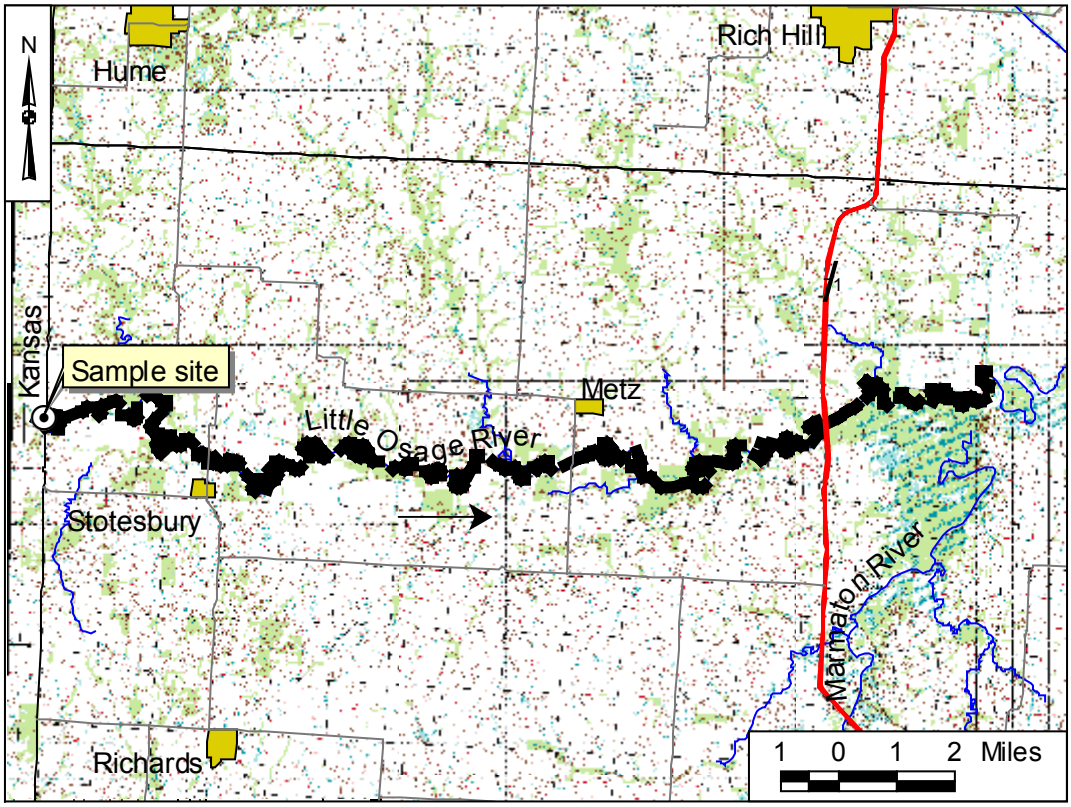
Standards that apply

- The US Environmental Protection Agency (EPA) placed this stream on the 303(d) list. They did not list a specific pollutant, but the Missouri Department of Natural Resources, based on a review of water quality data, believes EPA placed it on the list due to low levels of dissolved oxygen. State Water Quality Standards 10CSR20-7.031 state that for protection of warm water aquatic life, the dissolved oxygen level should be no lower than 5 mg/l or the normal dissolved oxygen profile of the stream, whichever is lower.

Dissolved oxygen (DO) levels in the Little Osage River as measured during summer low flow periods at various locations have ranged from 1.9 to 7.1 mg/L, with almost half the measurements below 5.0 mg/L. The range in DO is probably a function of just how small the flow in the stream is (if any) and how long the stream has been in this low flow condition. No point source wastewater

discharges or significant nonpoint sources are known to exist in the watershed of the Little Osage River and therefore it is being proposed for deletion from the 303(d) list. Observed DO levels appear to be due to the normal amount of oxygen demanding material entering a stream from an agricultural watershed. The Department of Natural Resources is in the process of drafting new standards for DO. These new criteria should clarify whether or not the observed DO levels in the Little Osage River exceed water quality standards. A map and a table of data collected by the U.S. Army Corps of Engineers may be found below.

Little Osage River in Vernon County, Missouri, with Sample Site



Dissolved Oxygen in the Little Osage River, 1991-1994

Date	Temperature (°C)	Dissolved Oxygen (mg/l)	Dissolved Oxygen Saturation
7/1/1991	28	3.9	50%
7/16/1991	26	2.6	32%
8/6/1991	27	2.2	28%
8/27/1991	24	2.4	29%
9/24/1991	16	5.1	52%
6/23/1992	22	6.2	71%

Date	Temperature (^{o}C)	Dissolved Oxygen (mg/l)	Dissolved Oxygen Saturation
5/10/1994	17	7.4	77%
6/14/1994	24	5.2	62%
7/12/1994	26	2.8	35%
8/16/1994	24	4.8	57%
9/6/1994	23	3.8	44%
10/11/1994	15	1.9	19%

Source: U.S. Army Corps of Engineers, Kansas City District

For more information call or write:
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